Garrulus (v. 611).

14. brandti. 1867, 193, Pl. iii.

Cyanolyca (v. 623).

9. viridicyanea. 1917, 465, Pl. viii. "Cyanolyca v. viridicyanea."

viridicyanea cuzcoensis (*W. L. Scl.* 1917). 1917, 465, Pl. viii.

Picathartes (v. 626).

1. gymnocephalus. 1874, 67, Pl. ii. (adult & young).

III.—*Notes on the Nidification of some Indian Falconidæ.* III. *The Genera* Ictinaëtus *and* Microhierax. By E. C. Stuart Baker, M.B.O.U.

(Plate II.)

Ictinaëtus malayensis (Reinw.).

The Black Eagle.

Up to the time Oates wrote the second volume of the 'Catalogue of the Birds' Eggs in the British Museum' the only existing account of the nesting of this fine Eagle was that of Hume in 'Nests and Eggs of Indian Birds,' and it is not quite certain that the eggs described by him are those of this Eagle.

In the first place, the nests are described as having been built on ledges on the faces of cliffs, whereas all nests taken since have, without exception, been found on trees; again, in one of these supposed Black Eagles' nests there were three eggs, but no one else has ever found more than two in a nest, and very rarely more than one. The colour of—or want of colour in—the fourth single egg almost certainly shows that it was not that of the Black Eagle, which lays very richly-coloured eggs. Finally, the lining membrane in the eggs described by Hume is paler and more yellow than in any of those since obtained.

Probably the first authentic egg of the Black Eagle is

one which was in the collection of Mr. J. C. Parker, and which was secured by me at his death, together with the skin of the female. This was taken on the 16th of April, 1883, somewhere in Kashmir, but the only note on skin and egg was "*Spilornis rutherfordi* 16/4/83," and an indecipherable word, which looks like Kooloo. On the back of the ticket is "Shot off nest with one egg very hard-set."

The skin and egg are both undoubtedly those of the Black Eagle, and the name inscribed, though in Mr. Parker's own handwriting, is assuredly only a clerical error, as not only was Mr. Parker a good ornithologist, but I had previously corresponded with him about this very egg under its proper name. The nest, he informed me, was built on a fir-tree on a cliff-side.

I found this fine Eagle breeding in the mountain ranges south of the Brahmapootra, and first took its egg in north Cachar. Previously I had found a nest containing a youngster in down, so the following year I went out to investigate about six weeks earlier, and was lucky enough to find a fresh egg. This was left for four days to see if another would be laid, and then taken.

The nest was a huge affair of sticks lined with green leaves, and was placed high up in a large tree in deep evergreen forest, at an elevation of about 5500 feet. Like all other nests which I have seen, this one was built on a tree standing in a very rugged country, but was not particularly hard to get at owing to the tree being covered with a network of the "elephant creeper" and other plants, which made climbing an easy matter. The tree itself grew on the side of a very narrow ridge, joining two hills together, and forming a narrow bridle-path, some three or four feet wide, which zig-zagged its rocky and difficult way from one Naga village to another. Looking over the edge of this path on one side, one could see through the straggling tree-tops into a depth below of many hundreds of feet, the drop being almost sheer, and the trees seeming to hang on by their roots in the most precarious way between jutting boulders and rocks. On the other side, though not quite so sheer,

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MENPES PRESS, WATFORD

Figs. 1-4. ICTINAËTUS MALAYENSIS.

Fig. 5. MICROHIERAX MELANOLEUCUS.

the cliff fell away very precipitously, yet holding enough soil to encourage a dense growth of oaks and other trees. Fortunately it was on this side of the ridge that the Black Eagles had selected a tree on which to build their nest, and clambering down the rocks I was soon at the foot of the tree, and in another five minutes was up to the nest.

Up to this point in the proceedings the parent birds had taken but little interest beyond wheeling round and round the tree and uttering their shrill, rather melancholy call. As, however, I got to the nest, both birds swooped down time after time to within a few feet of me, and once indeed the female almost struck me in passing. Leaving the egg, I then descended, and before I was half-way down, the female was back again in the nest and crouching over her egg.

Later, when I went to take the egg, the birds were much fiercer, and commenced their attacks directly I began to climb their tree, so that after trying to get up myself, I had to come down, and shoot the female before I could tackle the nest. Both birds swooped at me repeatedly, but the female again and again came within inches of my head, whereas the male never came within two or three feet. A fall at that height would have meant certain death, and it would have been quite impossible to have carried the egg down and also shield oneself, so that the murder of the parent bird was absolutely necessary.

This nest must have been over four feet in diameter and about eighteen inches deep, with a well-made depression in the centre lined with a pad of green leaves and the ends of green branches. The leaves were nearly all those of the "elephant creeper," and were so large that it only took about a dozen to make a thick, cool pad. The branches were just the small ends of oak twigs with the green leaves still adhering.

In the body of the nest the sticks were of considerable size, some of them fully an inch in diameter, and many of them over three feet in length. Most of these appeared to be dead sticks and branches either picked up by the birds off the ground, or torn off dead boughs. The sticks which

lay on the upper part were much smaller and more pliant, and seemed in some cases to have been torn from living trees.

The male secured another partner within a very short time of the death of his wife, and in the subsequent years the pair built a nest on the opposite side of the ridge, where they were quite safe from molestation, for though we could see it well enough, we could not get at it.

A second nest, taken in the adjoining Khasia Hills, was built in a tree growing on the side of the Lailancote-Cherrapoonji cliffs. I was never able to visit this nest in time to take the egg; but in 1913, after I had left India, one of my collectors sent me home an egg which he had taken from it. He refused to again rob the nest on the ground that the birds had attacked and nearly killed him on this occasion, and stipulated for the gift of a gun and ammunition to enable him to shoot or scare the birds away before taking the egg.

Colonel R. H. Rattray, who took this Eagle's egg in Danga Gali, found the parents quite as bold as those which I had robbed. He writes :—

"The only place I ever came across these Eagles breeding was near Danga Gali. During the summer of 1903 I was staying in Murree, and my men then reported to me that they had found an Eagle's nest in the Gali in question. When, however, we went out and examined it, we found that the young one had been hatched out.

"In 1904 I again went up to Danga Gali, arriving there about the 20th of April, and at once put men on to watch the hillside upon which the birds had nested the previous year. On the 3rd of May they found the nest occupied, and reported to me that the bird was sitting. I went out the next day, and found the great stick platform in a tall fir-tree, halfway down a nasty precipice. After a dangerous climb, we succeeded in getting to the ledge, out of which the tree grew, and I sent the men up, who reported one egg, which I directed them to bring down. The birds were most aggressive whilst the man was on the tree, and I had some

difficulty in persuading him to continue his climb up to the nest, and had eventually to fire at and wound one of the birds before they would desist from their attacks.

"This egg was much incubated, but I managed to clean it, and it is the one you now have in your collection.

"I was in Danga Gali in 1905, but failed to find the birds or their nest; Buchanan, however, had taken an egg exactly similar to mine some years previously from the same hill-side, so it is probable that the pair had bred there for many years."

Mr. J. Stewart, who has taken many nests of this Eagle in Travancore, gives the birds the same reputation for bravery in defence of their homes and young, and tells me that it is frequently necessary to frighten the birds off with gunfire before they will allow the native climbers to get up to the nests.

This gentleman has sent me home a mass of interesting notes about this Eagle, from which I have compiled the following information.

Many pairs have two nests, which they use apparently without any definite rule to guide them. Sometimes they occupy the same nest year after year, and then suddenly for no obvious reason leave it, and use the other nest, returning again to the first after a year's absence. Sometimes they will occupy alternate nests in alternate seasons, and, generally, when their eggs or young are taken will leave the robbed nest and lay for the second time in their other home. Even in this, however, one cannot prophesy with any certainty as to their movements, and more than once Mr. Stewart has taken a second egg from the same nest in one and the same season. Another curious thing is that these birds are very irregular in their laying, and frequently it would seem as if they miss a year's laying altogether. After his long residence in the southern part of Travancore, Mr. Stewart says:—

"I think I know practically every pair of birds and their nests within a radius of many miles, and often I have known birds resort to their nests, play about with them, do a few

odd repairs, stay by them all the breeding-season, yet make no attempt to lay."

They start nesting operations very early; Mr. Stewart has seen them repairing their nests in October and November, and his men have reported them as being back at their nests even earlier than this. At first, however, their interest in them is very casual; an odd hour or so may be spent in pulling out and in putting in a few sticks, and then some days may elapse before any more work is done. Some two months may be passed in this manner, by which time the body of the nest is repaired to suit their tastes, then after another interval of rest the more important work of lining their nests with green leaves is begun; this, if the birds are in earnest about laying, only takes two or three days, but even at this advanced stage the birds often delay their laying, and the lining has all to be done over again.

The actual laying season is from the end of November to the second week in January, but most of Mr. Stewart's eggs were taken in the end of December.

After the eggs have been laid the birds continue to put green leaves into the nest, for eggs have been found which have been much incubated, with fresh green leaves under them.

In southern India they appear to make much the same kind of nest, and to place it on much the same kind of tree as they do in northern India, but as a rule the ground on which the tree stands is not broken and precipitous; whereas, also, in the Himalayas the forest selected is generally more or less evergreen, in southern India it appears often to be deciduous.

Mr. Stewart has taken a nest from a tree so covered with creepers and parasites that in spite of its size it was difficult to detect, and also from trees in which it stood out as a conspicuous object visible from a considerable distance. One nest he described to me as having been built on a tree, the extreme summit of which had been broken off in a storm, and on the splintered end of the trunk reposed the mass of sticks of which the nest was composed.

The eggs are nearly always one only in number, but on three occasions Mr. Stewart has taken two eggs in the same clutch. They vary most extraordinarily in size and shape, and also in character and colour of their markings, but, taken as a whole, are the most handsome eggs of any of the birds-of-prey I know, with the exception perhaps of *Pernis*.

Excluding Hume's eggs, the authenticity of which I doubt, I have now seen 20 eggs of this Eagle, of which no less than 12 were taken by Mr. J. Stewart. The most usual type perhaps is as follows (Plate II. fig. 4) :—Ground-colour white to creamy white, primary markings, blotches, spots and specks of rich vandyke-brown, the majority of the blotches of great size, in some cases as much as 25 × 15 mm., but, of course, broken and irregular in shape. There are also a few smaller marks of a brown, so deep as to appear black. In this type of egg, the secondary markings are few in number and very small, such as there are being of a paler washed-out brown or sienna. There are really no subordinate or sub-shell markings of the usual grey or purple-grey tint.

A somewhat similar type to the above differs in being altogether a paler, more poorly-marked egg. The markings, which are equally large and numerous, and, as in the former type, irregularly distributed over the whole surface of the egg, are more of a dull earth-brown than vandyke-brown, with here and there a faint purplish or grey tint.

In this egg, as in the last described, there are practically no secondary markings.

Two eggs taken by myself in Cachar and a third taken in the Khasia Hills (Plate II. fig. 2) are extraordinarily handsome eggs. The ground-colour is a pale cream with a fair number of primary markings of rich vandyke and blackish brown, some fairly large, but mostly smallish blotches and spots. The secondary markings are extremely numerous over the whole of the egg, especially at the larger end, where they coalesce to form a cap or cloud of lilac and brownish grey upon which the deeper primary

markings stand well out, whilst the larger smudges and smears blend more or less at their edges with the surrounding colour.

Yet a third type of egg is more clouded than definitely blotched or spotted with colour. The primary marks consist of clouds and indefinite blotches of light earth-brown scattered sparsely over the whole surface of the egg, whilst underlying these, but far more numerous, are similar, though somewhat smaller, markings of faint neutral tint and greyish purple (Plate II. fig. 1).

An extraordinary egg given to me by Mr. Stewart (Plate II. fig. 3) was taken with the egg depicted in Plate II. fig. 4, and though both belong to the same clutch they contrast as strongly as any two eggs I have seen.

The whole ground-colour is a dull reddish ochre with a few pale reddish-brown markings scattered here and there over its surface, and with more numerous, but still fainter mottlings and clouds of neutral tint which coalesce and form a cap at the larger extremity. Single eggs very similar to this have been taken by Mr. Stewart.

The above four may be said to form the standard types of this egg, but a few may be obtained which are more or less intermediate, though generally inclining distinctly to one or the other of the four.

Most eggs are in shape very broad ovals, but little compressed towards the smaller end; in some, indeed, the difference between the two ends is almost negligible. In a few eggs the shape is a rather long oval, and in one or two the smaller end is well differentiated from the larger.

The texture is coarse and not very close, but the surface varies considerably; in some it is dull and almost rough to the touch, whilst in others it is comparatively smooth and exhibits a very faint gloss when fresh.

In length the eggs vary between 65·0 and 58·6 mm., and in breadth between 51·2 and 48·4 mm., whilst one abnormally small egg measures only 55·0 × 43·0 mm. This egg is a second one, laid after the first had been robbed.

The breeding-season over the greater part of this bird's range is, as I have already shown, during the months of November, December, and January, but in the higher hills and mountains in the north would appear to be in April and early May, and perhaps the end of March.

In the Khasia Hills a perfectly fresh egg was taken on the 2nd of May, and Rattray's hard-set one was taken on the 4th of the same month.

The Black Eagle is essentially a bird of forest, mountains, and wild country, but where such a combination exists, it is to be found practically all over India, Ceylon, Burma, and Malaya. In India it is not found in the plains except as a straggler in the non-breeding season, nor is it found even on the hills and mountains except within reach of heavy forest.

Colonel Rattray tells me that he saw one bird at Nowshera, and adds :—

"We certainly saw them at Kohat, where I once shot a bird that was annoying us when out shooting. We used to hate the bird at this place, for it was a no uncommon occurrence for one of them to accompany us, soaring high above us overhead, but out of range of the guns. They kept the birds down, and if a snipe got away wounded, they at once followed and picked it up. I know in this way I lost a number of snipe and quail. It was also a nuisance when out hawking, as it kept the houbara down so that they continued running and refused to be put up. I never heard of their nesting anywhere in the vicinity."

In Cachar, where the bird was, however, rare, we never saw any instances similar to that described by Colonel Rattray, even when we were snipe- or partridge-shooting on ground surrounded on all sides by forest. The various fishing Eagles and an occasional Osprey would regularly retrieve and carry off wounded birds of all descriptions, but we never saw or heard of a Black Eagle doing so. Up in the mountains, however, I once shot a Bamboo Partridge in a glade in deep forest, which was seized and carried off by an Eagle, I believe, of this species.

I have more than once, also, seen them stoop at and strike Jungle-fowl or Kalij Pheasant, either just on the outskirts of forest or actually in the forest itself. One evening I was going through some beautiful oak forest, high up on the Barail Range, when two or three Jungle-fowl ran across the path, from one side to the other, into the thin cover of caladiums and ferns which carpeted the ground. Just as they were disappearing out of sight, there was a rushing swish through the air, and a magnificent Black Eagle came hurtling down, struck the old cock Jungle-fowl fair on the back, bowling it over in a cloud of feathers. As the Eagle struck it rose again with a few flaps of its wings, and then turning in its stride, so to speak, was back instantaneously on to the fowl, which it seized and carried away without any apparent effort to a tree close by. It was most remarkable the manner in which this Eagle stooped through the interlacing boughs of the lofty trees, and again, when it had seized its prey, twisted its way in and out of their trunks whilst moving at great speed. The majority of birds-of-prey require more or less open ground in which to stoop, and the smaller birds when once they have obtained the cover of a tree or bush consider themselves safe. The performance as I have described it cannot, however, be anything unusual for the Black Eagle, as I once saw one eating a hen Jungle-fowl on a tree miles from any big clearance or open space, and have twice on other occasions seen them eating Wood-Partridge well in the heart of extensive forest. Probably they frequent the outskirts of clearances, rivers, and open glades for choice when hunting, but there is no doubt that forest and cover is no deterrent to the Eagle stooping when hungry, and is but little safeguard to the quarry.

They do not, however, restrict themselves to bigger game, and will eat locusts, grasshoppers, lizards, etc., and I have seen them regularly quartering deep and gloomy nullahs in heavy forest, and now and then stooping and seizing small things both in the air and off the ground and bushes, which I was too far away to identify. Their flight under these circumstances is slow, but very easy and pliant, and when

necessary a couple of beats of the wings suffice to increase the speed in a moment.

Its curiously long and straight claws would seem to be ill-adapted for striking heavy quarry, although the tarsi are extremely powerful. So far as I have been able to see, however, the result of the stoop is just as effective as it is when made by Eagles with the usual powerful short hind claw. A partridge which once nearly fell on the top of me, when struck by one of these Eagles, was dead before it fell to the ground, and had its back quite cleanly ripped from about the centre well up into the head, which was nearly torn off by the one and same stroke as that which opened the back.

It has a shrill cry which it sometimes utters when soaring, but it is on the whole a very silent bird, and one may be within the haunts of this bird all day long without hearing its plaintive call. When perching, it sometimes utters a low croak, and when attacking anyone at its nest, utters a rather loud croak as it stoops, possibly with a view to instilling fear.

Genus Microhierax.

The genus *Microhierax* contains several tiny birds worthy of a very high position among the Eagles and Falcons on account both of their beauty of form and wonderful daring and pluck. According to Sharpe's Hand-list there are six species of *Microhierax* confined to southern Asia and Malaya, of which three enter Indian and Burmese limits. Two of these, *Microhierax melanoleucus* and *M. fringillarius*, are very closely allied, whilst the third, *M. cærulescens* (or *M. eutolmus*), differs in having a white collar and red thighs.

Microhierax melanoleucus. (Pl. II. fig. 5.)

The White-thighed Falconet.

This little Falcon is found over the whole of the Assam Hills, both north and south of the Brahmapootra, from Bhutan to Sadiya in the north, and from Cachar and Sylhet

in the Surma Valley to Margherita in Lakhimpur in the south. It also occurs in Manipur, the Looshai Hills, and the upper Western Chin Hills.

The only account hitherto published of this bird's breeding is the one by myself, which appeared in vol. xi. of the Bombay Natural History Society's Journal, but since then I have been fortunate enough to take other eggs.

The first nest found by me was taken at Gunjong, North Cachar Hills, on the 13th of March, 1889; I was prowling about one evening with my gun, shooting an odd cock Jungle-fowl or two for the pot and taking notes and observations on birds generally, when I noticed what seemed to be a small black-and-white bird disappear into a hole in a branch of a tree high overhead. Knowing that there were no Woodpeckers or Barbets anything like this bird, and anxious to ascertain what it could be, I hammered on the trunk of the tree until it reappeared, when I at once shot it, and greatly to my surprise found it to be a White-thighed Falconet.

At this time I had not read Bingham's account of the nesting of *M. cærulescens*, so that I thought the Falconet must have gone into the Barbet's hole to rob it of eggs or young, and in order to see if this was the case, I climbed up the tree and opened out the hole. At first I could feel no eggs in it, but brought out two or three handfuls of beetles' wings and other remains of insects, and then felt a single egg lying in the bottom of the hole, which I secured and brought down. This egg, though it had been originally white, and was in size much the same as that of a Blue-eared Barbet, was of so totally different a texture that I saw at once it did not belong to any bird of that family. In size it measured 29·1 × 22·3 mm., and in shape was a very obtuse blunt oval; both ends were practically the same in size, whilst the texture was half-way between that of Barbet's eggs and of eggs of the Lark-heeled Cuckoos of the *Centropus* group. The chalky covering is not nearly so thick or so crumbly as it is on the eggs of those birds, but there is enough to make a distinct covering which can be scratched off with a knife. The whole

surface is much stained with yellow and grey, presumably from the rotten insect-remains upon which it had been lying, although it was quite fresh.

Whilst examining the bird and egg under the tree in which the nest-hole was, the mate of the former came wheeling round and round, but as I did not require it as a specimen for identification, I did not shoot it. The bird killed proved to be a female.

This particular nest-hole was made in a branch of a dead tree, standing in a Naga "jhum," or cultivation clearing, surrounded on all sides by dense bamboo and tree jungle, in which, however, there were other similar "jhums." The trees in these clearings are not cut down by the Nagas, but merely ringed so that they die within a few weeks, though it may be years before they rot away and fall. The branch in which the Barbet had bored her nest-hole was about 40 feet above the ground, with the entrance cut, as usual, in the lower surface of the bough.

A second egg brought to me by Nagas, and said to have been taken from a deserted nest-hole of a Barbet or Woodpecker, was similar to the above in size, shape, and texture, but was well marked with bold reddish blotches like those on a Sparrow-Hawk's eggs. Thinking that they had been faked by the Nagas, I tried to rub them off, but only succeeded in taking off the soft outer covering and leaving the hard inner shell exposed. It may be, therefore, that this little Falcon does sometimes lay spotted eggs. This egg measures 27·7 × 22·7 mm.

Other eggs taken in the Khasia Hills are exactly like that first described, and were taken on each occasion from holes in trees excavated either by Woodpeckers or Barbets. In one case the tree was one standing in a patch of rice cultivation on a hillside covered elsewhere with bamboos, and a few scattered trees; in another the hole had been bored in the under surface of a large branch high up in a tree standing on the outskirts of evergreen forest.

In Dibrugarh, Assam, where the bird was much more common than in either the North Cachar or the Khasia Hills,

neither Dr. Coltart nor myself ever succeeded in finding a nest, though a pair undoubtedly bred in an enormous Bombax standing a couple of hundred yards or so behind Dr. Coltart's bungalow. A pair of birds were always about this tree, and as it stood in solitary grandeur in a fairly wide stretch of tea-garden, it was very easy to watch, but in spite of this we never succeeded in tracing either of the birds to their nest.

In shape, texture, and general appearance the few eggs I have seen have been all alike, as they also were in coloration with the exception of the second one described.

Two eggs measure respectively 28·7 × 23·0 mm. and 29·0 × 22·8 mm.

The breeding-season apparently begins early in March, and extends through that month and April into the first few days of May, but most eggs will undoubtedly be found in March and the first half of April. On the other hand, an occasional clutch, possibly a second laying, may be taken as late as July.

Like most Eagles and Falcons, these little birds pair for life, and keep close to their same home surroundings year after year; but owing to the height at which they breed, it is often almost impossible to spot their nest-hole, so that season after season they escape molestation.

Despite their tiny size, the little Falcons of this genus are amongst the gamest of the game, and unite the dash and pluck of the true Falcons with the imperial attitudes and demeanour of the Eagles. In the 'Avicultural Magazine' (vol. v. 1914, pp. 93–98) I gave an account of one of these little birds which I kept for about two years in an aviary. At first I kept in the same cage a dozen little Kestrels (*Erythropus amurensis*) and a pair of large Woodpeckers (*Chrysocolaptes guttacristatus*). The latter were certainly three times his size and weight, but eventually he killed the female, and I had to remove the widower to save his life.

In all his ways he was an intolerable little bully, and though he never molested the Kestrels as long as they kept well away from his particular perch, he resented all approach

to familiarity on their part, and treated the few frightened advances made with the utmost contempt. He really did not appear to know what fear meant; to me and my servants he was merely condescending; while we pampered him he accepted what we had to offer, but if he did not approve he bit us, solemnly, though hard, and hissed his annoyance at us in the worst of bird-language. As a rule, he was an extreme little dandy, with the glossiest of black and the snowiest of white plumage, all kept very tight and close. When annoyed, however, he hunched his shoulders up, dropped his head low with opened beak, and sat with slightly extended wings and ruffled plumage to express his anger.

I imagine that on the whole insects form the greater part of these Falcons' food, especially during the season when the white-ant or termite is in flight, when all insectivorous birds gorge on them. At the same time they attack and eat birds, reptiles, small mammals, such as mice and bats, many of which far exceed themselves in weight and size. The tamed bird referred to above was caught because his feet had become entangled in the breast-feathers of a Scimitar Babbler, which was so heavy that he could not lift it, and all he could do was to scream his rage at a native who captured him in his puggree.

It is most interesting to watch Pigmy Falcons pursuing termites, and Dr. Coltart and I found them to be far more accurate and quick in catching them than any other bird we had an opportunity of watching. We often saw Rollers, various kinds of King-Crows, Flycatchers, Mynas, Bee-eaters, Kites, and other birds hawking all together over a flight, but none were nearly so expert as little *Microhierax*. Their movements on the wing were very like those of *Artamus fuscus*, the Swallow-Shrike, in whose company we frequently found them, but they were quicker, and their actions of course were aquiline, *i. e.*, they seized the termites in their feet and not with their bills. It was rather remarkable to find that all quarrelling and all signs of fear of the small birds for the birds-of-prey, more especially for the

Falconets, seem to disappear during a termite flight; presumably the abundant and delectable food available did away, for the time being, of any need for it.

We never found these little Falcons away from the hills or from the wild and broken country at their base; on the other hand, they did not ascend the hills to any height.

Microhierax cærulescens.

The Red-thighed Falconet.

With the exception of the hills and mountains in which *M. melanoleucus* is found, the Red-thighed Falconet is found throughout Garhwal, Nepal, and the Himalaya north of the Assam Ranges into the Shan States, eastern Burma, Siam, Cambodia, and northern Malaya.

The nest and eggs were first taken by Bingham, and are described in full in Hume's 'Nests and Eggs of Indian Birds.'

The eggs, four in number, were found in a hole in a decayed branch of a Pymma-tree at a great height from the ground, and were only discovered through seeing the birds flying into the hole. As seems to be invariably the case with these Falcons, there was a thick pad of beetles' wings and other insect-remains, upon which the eggs were lying, but otherwise no attempt had been made to build a real nest.

Hume describes the eggs as: "regular, moderately elongated ovals. The shell is very thin and fairly close in texture, but has no appreciable gloss. The original colour .... is a dead white, but the eggs as found were all suffused with a dirty yellow tint."

"The eggs vary from 1·1″ to 1·3″ in length and from ·85″ to ·88″ in breadth. They are equally unlike eggs of *Falco*, *Astur*, and *Circus*. As to size and shape, I can match them exactly with large eggs of *Cyanops franklini* or small ones of *M. marshallorum*, as regards texture and tint of discoloration I can match them exactly with some eggs of *Taccocua affinis*."

These eggs were taken on the 14th of April, in Tenasserim.

An egg sent to me from Perak, and obtained from the hills inland about twenty miles from that place, agrees exactly with the description of the eggs taken by Bingham. It measures 29·2 × 23·8 mm., and is a regular, but rather broad oval in shape, and has the same curiously stained surface. It was found on the 11th of February, 1908, in a deserted Barbet's or Woodpecker's nest-hole high up in a large tree in forest cultivation. The female was captured in the hole and sent with it. The nest consisted as usual of a mass of insect-remains, and all these small Hawks seem to have the same habit of eating their prey inside the nest-holes.

Microhierax fringillarius.

The Black-Legged Falconet.

This little Falcon, which replaces the White-thighed Falconet in the extreme south of Tenasserim, the Malay Peninsula, and further south, is even less well known than the two other Indian forms of Falconet. The only record of its nidification is that of Davison as quoted in Hume's 'Nests and Eggs.' The female and male were both shot, and the former, which was seen to come out of a disused Barbet's hole, contained a fully-formed egg ready to be laid, and in appearance exactly like those already described of *M. melanoleucus* and *M. cærulescens*, but of course without stains. As usual the nest-hole, although no eggs had yet been laid, contained a mass of insect-remains; according to Davison, principally of Lepidoptera and Neuroptera, whereas those of *M. melanoleucus* examined by me consisted principally of Coleoptera mixed with feathers from many birds.

The habits of all three of the species which are found within Indian limits appear to be much the same, though Davison, probably because he knew *M. melanoleucus* less well, considered the present species to be the bolder. He says that on one occasion he saw it stoop at a Blue Rock-Thrush (*Petrophila solitaria*); on another occasion he shot one which had caught and killed a Swallow. He also recorded that he had taken the remains of birds, much

bigger than the Falcons themselves, from the stomachs of the latter.

From what I have seen of these Falconets and their hunting, they seem to stoop at their prey on the wing, just as the larger Falcons do, striking it, when successful, with the hind claw, ripping the back open, and hurling it to the ground, where the slaughter is finished and the bird consumed as it lies. When, however, the bird is a very small one, such as a White-eye or a *Munia*, it is carried to the nearest tree to be eaten at leisure and in comfort.

IV.—*Erythrism in Birds' Eggs*: an Address read at the Third Oological Dinner on 26 September, 1917, by E. C. Stuart Baker, M.B.O.U.

Amongst the eggs I am exhibiting to-night there are perhaps very few that are startling either on account of their great rarity or exceptional coloration, but they serve to illustrate some remarks I would like to make on the subject generally of erythristic oology.

In the first place, it seems to me that the term erythrism has been too generally used, both by egg-collectors and oologists, as applying merely to abnormal red coloration in those eggs which normally show none. It should, however, be given a far wider interpretation than this, for it means, roughly speaking, the fact of being, or the act of becoming, red. If this is correct, then it follows that erythrism can be at once divided into two classes, normal and abnormal, and these again, especially the former, subdivided into many others.

As yet, so far as I know, normal erythrism in eggs has never been studied in connection with the classification of birds; yet it is possible that it may prove to be quite an important item amongst the many ways in which we egg-lovers believe that our particular branch may be of value. As regards abnormal erythrism, nothing further seems to